



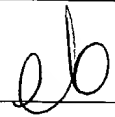
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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/981,740	10/19/2001	Eric Streicher	016499-802	6125
7590	03/10/2004		EXAMINER	
E. Joseph Gess BURNS, DOANE, SWECKER & MATHIS, L.L.P. P.O. Box 1404 Alexandria, VA 22313-1404			VINCENT, SEAN E	
			ART UNIT	PAPER NUMBER
			1731	

DATE MAILED: 03/10/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	09/981,740	STREICHER ET AL. 	
	<b>Examiner</b>	<b>Art Unit</b>	
	Sean E Vincent	1731	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 01 December 2003.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-26 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-26 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 19 October 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |   |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date: _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date: _____  | 6) <input type="checkbox"/> Other: _____                                    |

**DETAILED ACTION**

***Claim Rejections - 35 USC § 102***

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
2. Claims 1-3, 9, 11, 12, 14, 16-19 and 22-26 are rejected under 35 U.S.C. 102(b) as being anticipated by Plumat 2838881. Plumat teaches a method for making glass beads by firing an air fuel burner in a shaft furnace to thereby drawing air into the shaft (Fig. 2, ref. no. 4); adding raw material to the furnace (Fig. 10, ref. no. 10, 9); and adding oxidant via a single lance, multiple lances, a lance incorporated in an air fuel burner or an oxidant injection ring (Fig. 2, ref. no. 11, 4, 6, 6'; the ring of air inlets serve as both a single lance, multiple lances, or an oxidant injection ring. Also, the side air pods 6 and 6' for the burner serve as oxidant injection lances within an air burner). Plumat teaches adding air as the oxidant (col. 5, lines 18-21). This satisfies applicant's definition of oxidant given on page 5, paragraph 0025 which, states that oxidant includes non-pure oxygen which includes oxidants having an oxygen content greater than 21%, because air has a weight percent of 23% oxygen.
3. Plumat also teaches that oxidant is injected upward along the center of the furnace (Fig. 2, ref. no. 11, 1).
4. Plumat also teaches that the lances are at an angle to the vertical axis of the furnace (Fig. 2, ref. no. 11 and 1).
5. Plumat also teaches that the oxidant ring has a ratio to the furnace diameter of 0.2 to 0.9 (Fig. 2, ref. no. 11, 1).

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6. Plumat also teaches the claimed apparatus. Plumat's respective teachings with regard to the apparatus claims are as noted above with respect to the corresponding method claims.

7. Claims 17-18, 22 and 25-26 are rejected under 35 U.S.C. 102(b) as being anticipated by Palmer 2958161. Palmer teaches a vertical glass furnace having an shaft with an interior space open at the bottom (Fig. 1, ref. no. 12, the fact that glass is pouring out of the cylinder 12 means that the cylinder is "open"); an air fuel burner (Fig. 1, ref. no. 59, 60, 61); a raw material addition device (Fig. 1, ref. no. P, 17, 18, 19, 31, 20); and an oxidant addition element including a single lance, multiple lances and an oxidant ring (Fig. 1, ref. no. 62, the figure shows multiple lances encircling the furnace to form the "oxidant ring" and/or the multiple lances).

8. Palmer also teaches that the that the ratio of the outer diameter of the oxidant ring to an interior diameter of the furnace is 0.2-0.9 (Figure 1 , ref. no. 61 , 62, the holes 62 for the oxidant ring extend to the insulation 54. However the interior diameter may be measured from the area where the insulation 54 meets the interior insulation 53 which would make the ratio of the diameters fall within the claimed range).

### ***Claim Rejections - 35 USC § 103***

9. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Plumat 2838881 in view of Potters 2619776.

10. Plumat teaches applicant's claimed invention except for the claimed equivalence ratio. Potters teaches that it is known to use an equivalence ratio of 1.0 (col. 3, lines 56-60, the carbon-free combustion means that the fuel and oxidant are mixed such that the flame stoichiometry (equivalence) ratio is 1.0). It would have been prima facie obvious at the time the invention was

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made to combine Potters' equivalence ratio with Plumat's method of making glass beads because doing so would prevent carbon formation which would coat/contaminate the beads producing an undesirable product.

11. Claims 5, 10, 13 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Plumat 2838881.

12. Plumat teaches applicant's claimed invention except for the claimed oxidant velocities. Plumat does teach that it is known to control the velocity of the issuing air (oxidant) to control the suspension of the beads in the furnace (col. 5, lines 65-70, col. 6, lines 13-17). It would have been prima facie obvious at the time the invention was made to use the claimed velocities for the oxidant with Plumat's method of making glass beads because Plumat teaches that it is known to control the velocity to achieve the desired bead suspension and solidification.

13. Claims 6-8 and 20-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Plumat 2838881 in view of Brahmbhatt et al. 5611833.

14. Plumat teaches applicant's claimed invention except for using an oxy-fuel burner or the claimed flame stoichiometry. Brahmbhatt et al. teach that it is well known in the glass bead forming art to use an oxy-fuel flame (Fig. 1, ref. no. 11). Brahmbhatt et al. also teach that it is important to have flame stoichiometry of 2:1 which is within applicant's claimed range (col. 5 lines 10-16). Also, Brahmbhatt et al. teaches that the burner is directed upwardly in the shaft (Fig. 1, ref. no. 11) as does Plumat (Fig. 2, ref. no. 4).

15. It would have been prima facie obvious at the time the invention was made to combine Brahmbhatt et al.'s oxyfuel burner and stoichiometry with Plumat's method of and apparatus for making glass beads because doing so would permit the beads to manufactured at a much quicker

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pace and would reduce the chance for contamination due to carbon formation because the oxy-fuel burner burns cleaner and hotter than its air fuel counterpart. This would result in a faster processing time and less contaminants being produced.

### ***Response to Arguments***

16. Applicant's arguments filed December 1, 2003 have been fully considered but they are not persuasive.

17. In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., improving the production capacity..., sub-atmospheric operating pressures, "between about 0.7 and about 1.00") are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

18. In response to the argument that the definition of "oxidant" is limited to gases where oxygen content exceeds 21 mol % (23.3 weight %), the examiner disagrees. Page 5, paragraph 0025 is reproduced below:

[0025] Within the context of the present invention, the terms "oxygen" and "oxidant" include, but are not limited to: non-pure oxygen, including, but not limited to, oxidants having an oxygen content greater than 21%; oxygen-enriched air; and oxygen-enriched gases wherein the gases are other than pure air.

The examiner notes that "mol %" is not in paragraph 0025 or anywhere else in the applicant's specification. Further, according to paragraph 0025, "oxidant" and "oxygen" include ***but are not***

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**limited to** [the recited examples]. Further, assuming arguendo that the 21% recited in paragraph 0025 was mol %, applicant has admitted that this is equivalent to 23.3 weight % which is only 0.3 weight % different from the undisputed weight percentage of oxygen in air. This difference would be considered insignificant, especially since applicant never provided a mol % limitation of 21.0 (significant to the tenths). Lastly, the composition of dry air at sea level is generally accepted to be 21 mol % oxygen. In summary, paragraph 0025 cannot be used to limit the scope of the claims through the definition of "oxidant". Air is known as the most common and economical oxidant available and nothing in applicant's specification appears to exclude air.

19. In response to the argument that Palmer's apparatus is completely different from the claimed apparatus, the examiner disagrees. Applicant's apparatus claims state merely "A vertical glass furnace" and Palmer discloses a type of vertical glass furnace. Note that the manner or method in which a machine is to be utilized is not germane to the issue of patentability of the machine itself, see *In re Casey*, 152 U.S.P.Q. 235 (CCPA 1967). Therefore, operating pressures are not germane to the patentability of the vertical glass furnace.

20. In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). In other words, applicant cannot rebutt the prima facie case of obviousness with regard to the rejections over Plumat in view of Potters, or Plumat in view of Brahmhatt et al by arguing against Potters or Brahmhatt et al individually. Applicant has apparently ignored the stated reasons for combining the references.

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21. In response to the argument that Plumat does not explicitly teach claimed air velocities, the examiner agrees. However the claims containing those air velocities were not rejected as anticipated by Plumat. Applicant has apparently ignored the stated reasons establishing the prima facie case of obviousness.

***Conclusion***

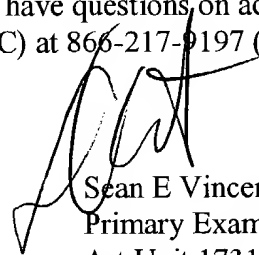
22. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

23. A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

24. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sean E Vincent whose telephone number is (571) 272-1194. The examiner can normally be reached on M - F (8:30 - 6:00).

25. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steven P Griffin can be reached on (571) 272-1189. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

26. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Sean E Vincent  
Primary Examiner  
Art Unit 1731

S Vincent